

Method and System for Expanding Services in a Digital Loop Carrier System

Abstract of the Invention

Expanding the number of telecommunication services ports, such as ATM-compatible ports, by linking a master unit comprising a fixed number of ATM-compatible ports with one or more expansion units comprising supplemental ATM-compatible ports. A flexible expansion link can be connected between a pair of expansion units to form a chain of expansion units. The master unit can be connected to the chain of expansion units via a flexible expansion link. This combination of a master unit and one or more linked expansion units provides a scalable deployment solution for the provisioning of ATM-compatible services to the subscriber base of a service provider. The master unit can send a continuous data stream in the downstream path to the chain of expansion units. The expansion units can synchronize to the framing pattern of the downstream data output by the master unit and extract information intended for a particular expansion unit from the framing pattern. The last expansion unit in the chain can loop the data stream in the upstream direction toward the master unit. Any information intended for the master unit can be inserted into the upstream data by an expansion unit. The framing pattern transports input/output data, ATM cell data, and a clock reference signal to support communications in the downstream and upstream data paths between the master unit and the chain of expansion units.

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